

## CONSTRUCTION OF A ROBOTIC CONTROL CIRCUIT

### **Focus:**

The goal of this lab is to build a digital robot control circuit using the design that you created during the Digital Circuits virtual lab.

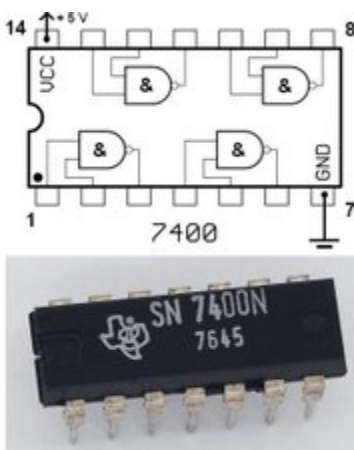
### **Overview:**

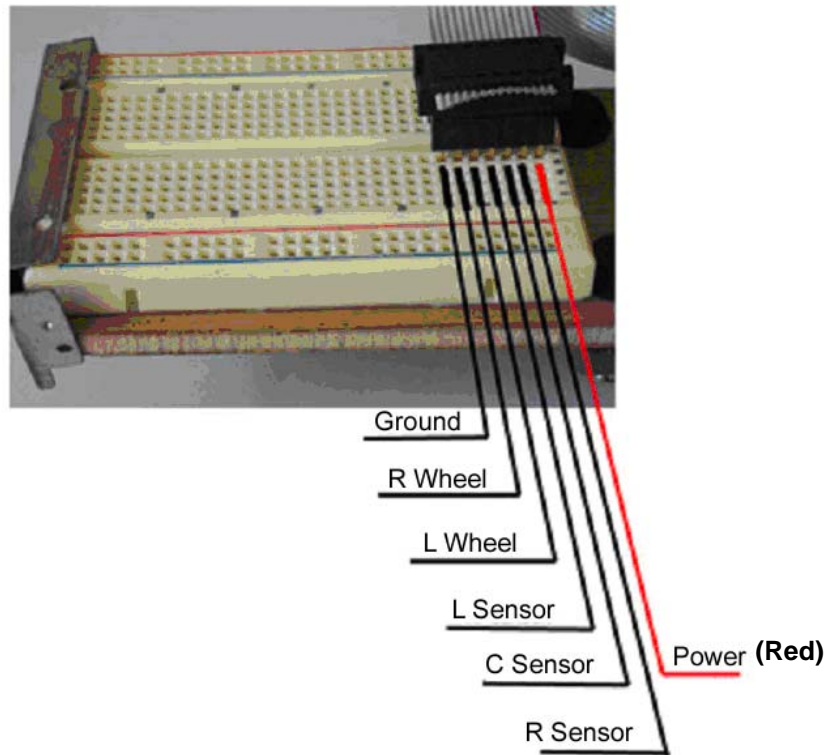
Theoretical design is an important element in engineering. But design must be put into practice. In this case, you will be required to wire a circuit board with appropriate components and power supply, so that the resulting circuit corresponds to the schematic diagram which you produced earlier.

### **Procedure:**

First familiarize yourself with the circuit board and the directions of electrical connectivity. Next insert however many chips you need across the horizontal centerline of the board. Then, begin wiring the circuit by inserting lengths of wire in the appropriate holes. Add two additional wires on each chip—one from “ground” (pin 7) and one from +5V (pin 14). These wires should go to the appropriate location on the board as indicated in the diagram on the following page. The same should be done for the inputs and outputs.

Once your wiring is done, take your circuit to the TA who will attach it to the robot. Using a flashlight as a light source, you will be able to confirm that your circuit indeed does control the motion of the robot. Writeup: none.





**Part II:** “Reverse engineer” the sample circuit. That is, from the wiring, deduce the logical circuit and write an explanation with a truth table of how it operates with the 3-sensored car.

